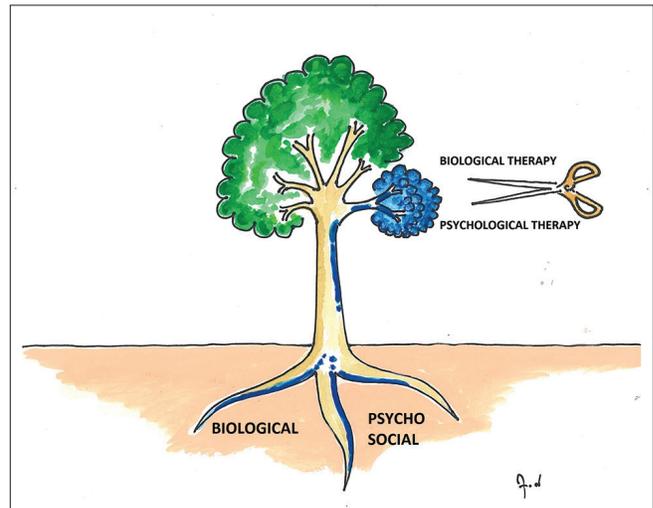


Biopsychosocial Model in Contemporary Psychiatry: Current Validity and Future Prospects

The biopsychosocial model (BPS) was proposed by George L. Engel in 1977 as a needed medical model to explain psychiatric disorders.^[1] Since then, this model had gained wide acceptability across the globe. It systematically explained the complex interplay of three major dimensions (biological, psychological, and social) in the development of psychiatric disorders. It explained that a person does not suffer as isolated organs but rather as a whole. This provided a holistic approach to psychiatric illnesses. The emotional tone of a person, his/her personality, the surrounding environment, and other social parameters do influence the manifestation of illness. The model established a holistic and empathetic approach in psychiatric practice^[2] Over the past four decades, many changes happened in our understanding of psychiatric disorders, and hence, there is reluctance in accepting the biopsychosocial model in reality.^[3,4]

WHY THERE IS A DOUBT ON THE VALIDITY OF THE MODEL?

Various biological breakthroughs such as exponential progress in neuroimaging, neurophysiology, neurochemistry, neuro-immunology, neuroendocrinology, and genomics and the advancements in psychopharmacology have changed the very face of psychiatry in the last few decades. Newer neurobiological discoveries along with advances in science and technologies have paved the way for a more evidence-based, objectively verifiable and biologically grounded medical discipline of psychiatry.^[5] This progress has started giving hope of improving the understanding of mental processes during health and disease as well as the etio-pathological basis of psychiatric illnesses. This biological framework promises new and improved management strategies. In this enthusiasm for the latest growth, psychosocial aspects of psychiatric illnesses are being relegated to the backside and are considered outdated. It has been seen that there is a deficient theoretical background regarding the content of the biopsychosocial model and also its functioning. There is also a lack of consensus on how these separate factors interact and result in the expression of the disease. Thus, this model is being



questioned, and the biomedical model is promoted as a marker of progressive thinking.

Unprecedented developments in biological psychiatry have amassed a wealth of knowledge and demystified some of the aspects of brain and mind. It has started influencing the understanding of causation, diagnostic, and assessment strategies as well as management to certain extents. While working with this new framework, it is easy to get disillusioned with speculative and theoretical psychosocial schools of understanding psychiatry persisting for long. On the other hand, supporters of psychosocial schools often criticize the growth of biological psychiatry by ridiculing the consistently changing terrain of the research; nonreplicability of earlier celebrated neurochemical and genetic findings in larger samples; nonspecificity of neurochemical, neurophysiological, neuroimaging, and genetic findings and almost negligible effect of biological progress on outcome of the psychiatric illnesses till date. The provocative sloganeering and ostracizing by a rhetorical attack of followers of both the camps had made the supporters seem to be in conflict.

THE GROWTH IN BIOLOGICAL PSYCHIATRY

Developments in neurobiology heralded in an expansion of the biological framework for psychiatry

and provided a scientific and rational outlook to psychiatry. Etio-pathological understandings have greatly improved, and it had an effect on understanding and, to some extent, the classification of psychiatric disorders. Psychopharmacological research has led to the development of more specific medications with increasingly benign side effects. These changes have overarching benefits to psychiatry. The medical model has a major influence on the inclusion of psychiatry in mainstream medicine. Professionals in other disciplines could relate to it easily, and psychiatric disorders and its management looked less esoteric to them. It helped in the reduction of stigma, resulting in a larger number of clients seeking treatment. Those patients of common mental disorders who till now feared psychiatry have started seeking help with less hesitation. With a greater emphasis on biology, there is an increase in the chances of talented students taking up psychiatry. The discipline becomes a more technologically sophisticated and more medicine-allied branch.^[6]

PITFALLS OF BIOLOGICAL PSYCHIATRY

Despite the growth of biological psychiatry, the outcome of the patients with psychiatric illness has only marginally improved in the past decades.^[7,8] Exciting research and better etio-pathological understanding had minimal translational results. Application in clinical practice remained elusive than expected. Although advances in biological psychiatry are imminently useful, nothing very assuring is apparent even today that can transform management and outcome. The biomedical model, which described mental disorders as defects in brain structure or dysregulations in a neurotransmitter system or any genetic defect, could not lead to the identification of any reliable biomarker for specific psychiatric disorders. The prevalent chemical imbalance theory could not provide any diagnostic test involving estimation of neurotransmitter levels that could be utilized in clinical practice. Neither of the primary nosological systems of psychiatric disorders such as the DSM or ICD has incorporated biological tests to identify, diagnose, or classify psychiatric disorders nor are there any valid and reliable biological tests available to diagnose any psychiatric illnesses.^[9] It is also blamed for the dehumanization of medicine and focusing only on the disease, at the expense of ignoring the uniqueness and individuality of each client. The reductionist approach of the biomedical model, which conceptualized all behavioral manifestations as derangements in physicochemical principles, could not suffice to explain all facets of a disorder. Similarly, the exclusionist principle of excluding everything from the category of disease if not explainable was also not able to holistically conceptualize psychiatric disorders. The “one care suits all” approach of the biomedical model also

undermines the “client-centered” approach, and thus, the individual variations are not taken into account.

THE INTEGRATION OF BIOLOGICAL AND PSYCHOSOCIAL COMPONENTS

Advances in our understanding of genomics and neurobiology have provided irrefutable evidence that psychological and social influence impact the flexible and adaptive biological system powerfully. For example, genetics contribute to the causation of schizophrenia, and the likelihood of development of illness is dependent on the closeness of the relationship, i.e., monozygotic twins’ concordance is 50% and four to five times that of dizygotic twins. Nevertheless, it clearly demonstrates that the psychosocial environment plays an important role. Gene expression is influenced by environmental exposure. The role of epigenetics and thus, the importance of the environment in the causation of psychiatric disorders are well established now. Psychiatric disorders are not the result of a linear cause and effect medical model but are the result of a complex circular model of multiple causes and effects. In addition, these causes and effects are not hierarchical and can influence each other. As the inherited changes in psychiatric disorders are generally polygenic, a single gene cannot be pointed out for the causation of a disorder. Genes are a basic unit of inheritance and provide structural and functional information for the development and functioning of the human body and brain. Ideally, they help or serve a function. Genetic defects or dysfunctions contribute to most of the psychiatric disorders. Research on epigenetics has provided evidence about the interactions of genes and the environment. The environment, which determines the psychosocial milieu of an individual, has a definite impact on the manifestations in behavior. The role of epigenetics is already evident for psychiatric disorders such as major psychosis, Alzheimer’s disease, and autism spectrum disorders. The activating or silencing of genes and their regulation are majorly via environmental contributions, and thus, the role of psychosocial determinants is overwhelming.^[10]

The etiological complexity of psychiatric disorders has made it impossible to explain their causation through a single explanation. Simple Mendelian disorders or infectious diseases can be explained easily through the biomedical model; but for psychiatric disorders, there is a need to incorporate several factors. Thus, both biological and psychosocial models are unable to explain psychiatric disorders adequately. For example, if we take one of the most prevalent psychiatric disorders, depression, on one side, improvement through pharmacological mechanisms targeting the

neurotransmitter imbalance can be observed, and on the other side, despite adequate and rational treatments, there might not be noticeable improvement with them in individuals experiencing ongoing psychosocial stressors. Psychiatric disorders cannot be fully explained with only behavioral or psychodynamic perspective. It is also accepted that psychological experiences are also dependent on the functioning of the brain. Thus, the causal bridge about how biological factors can result in psychological manifestations are to be studied in detail. However, there is still scarcity in the identification of any psychological manifestation which can be adequately explained through biology only. Various facets such as neurochemistry, cognition, personality, environment, and so on should be analyzed while formulating a psychiatric disorder. Substance use disorder can be explained well with this formulation. It is known that there are cognitive predispositions in this group of individuals, which act vulnerable to them. The presence of environmental cues in the form of peer pressure also forms an important part. Family history also has a social and a biological component. The personality of the patient also acts as an important predisposing and perpetuating factor. Thus, the biopsychosocial approach provides us with the most integrative causality for such a complex interplay of factors.

In psychiatry, each patient is different. The beliefs, wishes, and drives of a patient encompass many facets and also impact his/her treatment process. Other psychosocial aspects such as social support, family, and the role of culture in psychiatric disorders also point to the fact that the individual differences are not solely due to neurobiological dysfunctions or any biological models.^[5] The system of human beings comprises of a subpersonal component comprising of the nervous system, made of neural networks and cells, which are made of molecules and atoms. The other part is supra-personal, which comprises of the psychosocial context of the individual, which is made of the family, culture, community, and the society of the individual.^[11] Even for psychiatric disorders like schizophrenia, where biological explanations prevail, there remains a role of the suprapersonal aspect. It has been seen that stressful events indeed precipitate or cause fluctuations in the disease. The role of social support is also well established for such disorders. Interventions, however, can be based on a factor that has the maximum impact with the least harm or is the most responsive to interventions within the least possible time and the least amount of resources, etc. The Global Mental Health (GMH) initiatives undertaken by WHO also endorse the biopsychosocial approach.^[12] The multisectoral interventions for tackling mental health problems such as involving the public sector can also prove helpful in psychiatric

disorders. Psychotherapy research in depression, anxiety disorders, obsessive-compulsive disorders, and personality disorders have proven that effective therapy normalizes basal brain metabolism and basal cerebral blood flow, and they resemble neurobiological changes after successful psychopharmacological treatments.^[13-15] This provides evidence for the bridge between the two models: biopsychosocial and biomedical.

Psychiatry cannot afford to ignore social determinants of health such as poverty, illiteracy, migration, unplanned urbanization, and inequitable distribution of resources as well as personal attributes such as lifestyle choices, personality, motivation, desires, and fantasies in the understanding of illnesses. These social factors indeed powerfully influence the course and outcome of psychiatric disorders. Inequitable social availability of resources in childhood can pave the pathway for future psychiatric disorders.^[16,17] Disruption in social support or social network predisposes psychiatric disorders. The social facet, which also involves culture, has shown that there are specific ramifications of psychiatric disorders due to cultural context.

CONCLUSION

The biopsychosocial model will continue to remain valid in medicine and more so in psychiatry. Mutual disrespect or contempt of biological or psychosocial schools of psychiatry are not based on science.^[2] Presently, a collaborative approach involving both the psychosocial and biomedical model is needed to enhance the horizon of psychiatric knowledge. The reality that mental disorders are caused by multi-level mechanisms makes the biopsychosocial approach valid. What remains is to stitch the different factors to make a reliable network of factors that can provide a reliable framework to explain psychiatric disorders. Questions could be raised, such as “Can we ever think about dealing with a patient of dissociative disorder with an understanding of neurobiology alone?” or “Can we effectively manage a patient with schizophrenia only with psychological treatments?” Both approaches have “kernels of truth” for an understanding of complex phenomena arising from the brain. Persistent evolution of biological science and its integration with psychology for understanding complex diseases is necessary for holistic understanding and management of disorders. The medical curriculum should be regularly upgraded to incorporate the latest biological framework, and an understanding of psychosocial theories in light of the latest knowledge and discoveries should be done. The need of the hour is about resetting relative positions of biological and psychosocial models in context with each other, for better development and progress of the psychiatry.

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